

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	cluster\$3 with (documents data) same "basic vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 11:36
L2	5	cluster\$3 same "basic vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 11:36
L3	7176	(707/1,3,4,5).CCLS.	USPAT; USOCR	OR	OFF	2006/12/20 16:05
L4	2	3 and ("basic vector" or "basis vector") same cluster\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:13
L5	12	3 and ("basic vector" or "basis vector") and cluster\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:15
L6	2	3 and ("basic vector" or "basis vector") and (contribution with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:23
L7	140	"contribution vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:24
L8	1	"contribution vector" same (inner with product)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:25

## EAST Search History

L9	6	"contribution vector" same ((basic or basis) with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:32
L10	33	kobayashi-mei.inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:38
L13	30	aono-masaki.inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:39
S1	7240	(data with retriev\$3) and vector and matrix	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:03
S2	323	S1 and eigenvector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:04
S3	151	S2 and (covariance with matrix)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:04
S5	8	S3 and (weight with similarity)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:20
S6	156	(display\$3 with cluster) and (classify\$3 with cluster)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:09

## EAST Search History

S7	20	S6 and (adjacent with cluster)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:12
S8	2	S7 and GUI	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:13
S9	23	S6 and (GUI or "graphical user interface")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 14:14
S10	561	"residual vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:03
S11	1212	"basic vectors"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:04
S12	5478	"covariance matrix"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:04
S13	2	S10 and S11 and S12	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:05
S14	1	("6804688").PN.	USPAT; USOCR	OR	OFF	2006/03/31 11:27
S15	120	database with vector same keyword	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:27

## EAST Search History

S16	6	S10 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 11:28
S17	5	S12 and S16	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 14:57
S19	6	S10 and (vector with keyword)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 14:59
S20	5	S12 and S19	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:00
S21	268165	(data or information or document or file) with retriev\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:01
S22	697	S12 and S21	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:01
S23	197	S22 and eigenvector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:01
S24	40	S23 and residual	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:02

## EAST Search History

S25	30	S24 and weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 15:02
S26	5478	"covariance matrix"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S27	268165	(data or information or document or file) with retriev\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S28	697	S26 and S27	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S29	197	S28 and eigenvector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S30	40	S29 and residual	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S31	30	S30 and weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 16:59
S32	13	S31 and similarity	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 17:54

## EAST Search History

S33	9	S32 and basic	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 17:55
S34	5074	residual with matrix	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 17:55
S35	49	S26 and S34 and S27	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 17:55
S36	16	S35 and eigenvector and vector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 17:56
S37	13	S36 and weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 18:03
S38	4	S37 and basic	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 18:05
S39	1212	"basic vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 18:05
S40	5	S26 and S27 and S39	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/31 18:05

## EAST Search History

S42	3904	residual with vector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 14:41
S43	603	"residual vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 15:50
S44	40	"residual vector" and (cluster\$3 with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 15:51
S45	5	S44 and (covariance with (matrice matrix))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:03
S46	3	S44 and (basic with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:04
S47	1382	"basic vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:04
S48	4	S47 and "residual vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:34
S49	1	S47 and (classify\$3 with cluster) same (basic with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:36

## EAST Search History

S50	1	S47 and (classify\$3 with cluster)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 16:35
S51	9	S47 and (cluster\$3 same (basic with vector))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 17:41
S52	2072	contribution with vector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 17:42
S53	17	S47 and S52	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 17:44
S54	140	"contribution vector"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 17:45
S55	2	"contribution vector" same ((basic with vector) or (document with vector))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/19 17:46
S56	14	"contribution vector" and ((basic with vector) or (document with vector))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 11:35




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 Terms used **cluster basic vector**

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# 1 [An investigation of linguistic features and clustering algorithms for topical document clustering](#)



Vasileios Hatzivassiloglou, Luis Gravano, Ankineedu Maganti

 July 2000 **Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval**

Publisher: ACM Press

Full text available: pdf(859.31 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We investigate four hierarchical clustering methods (single-link, complete-link, groupwise-average, and single-pass) and two linguistically motivated text features (noun phrase heads and proper names) in the context of document clustering. A statistical model for combining similarity information from multiple sources is described and applied to DARPA's Topic Detection and Tracking phase 2 (TDT2) data. This model, based on log-linear regression, alleviates the need for extensive search in orde ...

## 2 [Book reviews: Foundations of statistical natural language processing](#)



Gerhard Weikum

 September 2002 **ACM SIGMOD Record**, Volume 31 Issue 3

Publisher: ACM Press

Full text available: pdf(127.72 KB)

 Additional Information: [full citation](#)

## 3 [Message extraction through estimation of relevance](#)

Christopher Landauer, Clinton Mah

 June 1980 **Proceedings of the 3rd annual ACM conference on Research and development in information retrieval**

Publisher: Butterworth &amp; Co.

Full text available: pdf(1.16 MB)

 Additional Information: [full citation](#), [references](#), [citations](#)

## 4 [Industrial session: Vector and matrix operations programmed with UDFs in a relational DBMS](#)



Carlos Ordonez, Javier García-García

 November 2006 **Proceedings of the 15th ACM international conference on Information and knowledge management CIKM '06**

**Publisher:** ACM Press

Full text available:  [pdf\(204.02 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In general, a relational DBMS provides limited capabilities to perform multidimensional statistical analysis, which requires manipulating vectors and matrices. In this work, we study how to extend a DBMS with basic vector and matrix operators by programming User-Defined Functions (UDFs). We carefully analyze UDF features and limitations to implement vector and matrix operations commonly used in statistics, machine learning and data mining, paying attention to DBMS, operating system and computer ...

**Keywords:** SQL, UDF, matrix, vector

## 5 Cache Refill/Access Decoupling for Vector Machines

Christopher Batten, Ronny Krashinsky, Steve Gerding, Krste Asanovic

December 2004 **Proceedings of the 37th annual IEEE/ACM International Symposium on Microarchitecture MICRO 37**

**Publisher:** IEEE Computer Society

Full text available:  [pdf\(319.32 KB\)](#) Additional Information: [full citation](#), [abstract](#)

Vector processors often use a cache to exploit temporal locality and reduce memory bandwidth demands, but then require expensive logic to track large numbers of outstanding cache misses to sustain peak bandwidth from memory. We present refill/access decoupling, which augments the vector processor with a Vector Refill Unit (VRU) to quickly pre-execute vector memory commands and issue any needed cache line refills ahead of regular execution. The VRU reduces costs by eliminating much of the outstan ...

## 6 Register file and memory system design: Three-dimensional memory vectorization for high bandwidth media memory systems

Jesus Corbal, Roger Espasa, Mateo Valero

November 2002 **Proceedings of the 35th annual ACM/IEEE international symposium on Microarchitecture**

**Publisher:** IEEE Computer Society Press

Full text available:  [pdf\(1.29 MB\)](#)  [Publisher Site](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Vector processors have good performance, cost and adaptability when targeting multimedia applications. However, for a significant number of media programs, conventional memory configurations fail to deliver enough memory references per cycle to feed the SIMD functional units. This paper addresses the problem of the memory bandwidth. We propose a novel mechanism suitable for 2-dimensional vector architectures and targeted at providing high effective bandwidth for SIMD memory instructions. The basi ...

## 7 Analysis of benchmark characteristics and benchmark performance prediction



Rafael H. Saavedra, Alan J. Smith

November 1996 **ACM Transactions on Computer Systems (TOCS)**, Volume 14 Issue 4

**Publisher:** ACM Press

Full text available:  [pdf\(1.02 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Standard benchmarking provides to run-times for given programs on given machines, but fails to provide insight as to why those results were obtained (either in terms of machine or program characteristics) and fails to provide run-times for that program on some other machine, or some other programs on that machine. We have developed a machine-independent model of program execution to characterize both machine performance and

program execution. By merging these machine and program characteriz ...

**Keywords:** abstract machine performance model, benchmark analysis, execution time prediction, microbenchmarking

## 8 GPGPU: general purpose computation on graphics hardware



David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff Woolley, Aaron Lefohn

August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**

**Publisher:** ACM Press

Full text available: [pdf\(63.03 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#)

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely powerful and flexible processor. The latest graphics architectures provide tremendous memory bandwidth and computational horsepower, with fully programmable vertex and pixel processing units that support vector operations up to full IEEE floating point precision. High level languages have emerged for graphics hardware, making this computational power accessible. Architecturally, GPUs are highly parallel s ...

## 9 Improving text retrieval for the routing problem using latent semantic indexing



David Hull

August 1994 **Proceedings of the 17th annual international ACM SIGIR conference on Research and development in information retrieval**

**Publisher:** Springer-Verlag New York, Inc.

Full text available: [pdf\(883.83 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

## 10 Image processing: Image data compression in wavelet transform domain using modified LBG algorithm



Othman Omran Khalifa

September 2003 **Proceedings of the 1st international symposium on Information and communication technologies ISICT '03**

**Publisher:** Trinity College Dublin

Full text available: [pdf\(240.11 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The recent growth of data intensive digital audio, image, and video applications, have not only sustained the need for more efficient ways to compress images but have made compression of such signals central to image-storage technology and digital communications. Data transfer of uncompressed video over digital networks requires very high bandwidth. The state-of-the-art image compression techniques may exploit the dependencies between the subbands in a wavelet transformed image. In this paper, a ...

## 11 High Performance Linear Algebra Operations on Reconfigurable Systems



Ling Zhuo, Viktor K. Prasanna

November 2005 **Proceedings of the 2005 ACM/IEEE conference on Supercomputing SC '05**

**Publisher:** IEEE Computer Society

Full text available: [pdf\(460.47 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Field-Programmable Gate Arrays (FPGAs) have become an attractive option for scientific computing. Several vendors have developed high performance reconfigurable systems which employ FPGAs for application acceleration. In this paper, we propose a BLAS (Basic Linear Algebra Subprograms) library for state-of-the-art reconfigurable systems. We study three data-intensive operations: dot product, matrix-vector multiply and dense

matrix multiply. The first two operations are I/O bound, and our designs ...

## 12 Music analysis and information retrieval: Incorporating machine-learning into music



### similarity estimation

Kris West, Stephen Cox, Paul Lamere

October 2006 **Proceedings of the 1st ACM workshop on Audio and music computing multimedia AMCMM '06**

**Publisher:** ACM Press

Full text available:  pdf(971.71 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Music is a complex form of communication in which both artists and cultures express their ideas and identity. When we listen to music we do not simply perceive the acoustics of the sound in a temporal pattern, but also its relationship to other sounds, songs, artists, cultures and emotions. Owing to the complex, culturally-defined distribution of acoustic and temporal patterns amongst these relationships, it is unlikely that a general *audio* similarity metric will be suitable as a *music* ...

**Keywords:** *audio, machine-learning, music similarity*

## 13 Latent semantic space: iterative scaling improves precision of inter-document




### similarity measurement

Rie Kubota Ando

July 2000 **Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval**

**Publisher:** ACM Press

Full text available:  pdf(903.29 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a novel algorithm that creates document vectors with reduced dimensionality. This work was motivated by an application characterizing relationships among documents in a collection. Our algorithm yielded inter-document similarities with an *average precision* up to 17.8% higher than that of singular value decomposition (SVD) used for Latent Semantic Indexing. The best performance was achieved with dimensional reduction rates that were 43% higher than SVD on average. Our algorithm ...

## 14 Recognising and using named entities: Text classification and named entities for new



### event detection

Giridhar Kumaran, James Allan

July 2004 **Proceedings of the 27th annual international ACM SIGIR conference on Research and development in information retrieval SIGIR '04**

**Publisher:** ACM Press

Full text available:  pdf(270.96 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

New Event Detection is a challenging task that still offers scope for great improvement after years of effort. In this paper we show how performance on New Event Detection (NED) can be improved by the use of text classification techniques as well as by using named entities in a new way. We explore modifications to the document representation in a vector space-based NED system. We also show that addressing named entities preferentially is useful only in certain situations. A combination of all the ...

**Keywords:** named entities, new event detection, text classification, topic detection and tracking

## 15 A robust parallel solver for block tridiagonal systems



R. Bramley, A. Sameh



June 1988 **Proceedings of the 2nd international conference on Supercomputing**

**Publisher:** ACM Press

Full text available: [pdf\(1.57 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

An iterative method for the solution of nonsymmetric linear systems of equations is described and tested. The method, block symmetric successive over-relaxation with conjugate gradient acceleration (BSSOR), is remarkably robust and when applied to block tridiagonal systems allows parallelism in the computations. BSSOR compares favorably to unpreconditioned conjugate gradient-like algorithms in efficiency, and although generally slower than preconditioned methods it is far more reliable. The ...

# 16 Direction as a spatial object: a summary of results



Shashi Shekhar, Xuan Liu

November 1998 **Proceedings of the 6th ACM international symposium on Advances in geographic information systems**

**Publisher:** ACM Press

Full text available: [pdf\(837.57 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** direction, orientation, oriented spatial object, unbounded object

# 17 Composite document extended retrieval: an overview



Edward A. Fox

June 1985 **Proceedings of the 8th annual international ACM SIGIR conference on Research and development in information retrieval**

**Publisher:** ACM Press

Full text available: [pdf\(1.03 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Experimental information retrieval (IR) systems, some dating back to the sixties, have demonstrated the viability of fully automatic document storage and retrieval methodologies with small to medium size bibliographic collections [72]. Many of these experimental systems utilize the vector space model in which each important term (such as a word stem) identifies a different dimension in a space, so that matrix methods and vector operations can be defined on queries and documents. Statistical ...

# 18 Courses: Discrete differential geometry: an applied introduction



Eitan Grinspun, Mathieu Desbrun

July 2006 **Material presented at the ACM SIGGRAPH 2006 conference SIGGRAPH '06**

**Publisher:** ACM Press

Full text available: [pdf\(4.80 MB\)](#) Additional Information: [full citation](#), [abstract](#)

An introduction to fundamentals of discrete differential geometry (DDG), a nascent area of computational science with exciting simulation and geometry processing applications. Lectures discuss continuous and discrete geometry in the context of cloth, shell, and fluid simulation as well as remeshing and parameterization problems.

# 19 Landing CG on EARTH: a case study of fine-grained multithreading on an evolutionary path





Kevin B. Theobald, Gagan Agrawal, Rishi Kumar, Gerd Heber, Guang R. Gao, Paul Stodghill, Keshav Pingali

November 2000 **Proceedings of the 2000 ACM/IEEE conference on Supercomputing (CDROM)**

**Publisher:** IEEE Computer Society

Full text available:

 pdf(150.46 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)  
 [Publisher Site](#)

We report on our work in developing a fine-grained multithreaded solution for the communication-intensive Conjugate Gradient (CG) problem. In our recent work, we have developed a simple, yet very efficient, solution to executing matrix-vector multiply on a multithreaded system. This paper presents an effective mechanism for the reduction-broadcast phase, which is implemented and integrated with the sparse MVM resulting in a scalable implementation of the complete CG application.

Results 1 - 19 of 19

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 Terms used **basis vector** **cluster** **residual vector**

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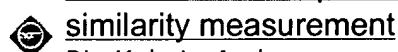

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### 1 [Latent semantic space: iterative scaling improves precision of inter-document](#)



Rie Kubota Ando

 July 2000 **Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval**

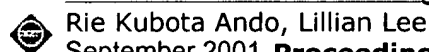
Publisher: ACM Press

 Full text available: [pdf\(903.29 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a novel algorithm that creates document vectors with reduced dimensionality. This work was motivated by an application characterizing relationships among documents in a collection. Our algorithm yielded inter-document similarities with an *average precision* up to 17.8% higher than that of singular value decomposition (SVD) used for Latent Semantic Indexing. The best performance was achieved with dimensional reduction rates that were 43% higher than SVD on average. Our algorit ...

### 2 [Iterative residual rescaling](#)


 September 2001 **Proceedings of the 24th annual international ACM SIGIR conference on Research and development in information retrieval**

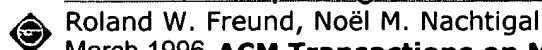
Publisher: ACM Press

 Full text available: [pdf\(278.41 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We consider the problem of creating document representations in which inter-document similarity measurements correspond to semantic similarity. We first present a novel subspace-based framework for formalizing this task. Using this framework, we derive a new analysis of Latent Semantic Indexing (LSI), showing a precise relationship between its performance and the uniformity of the underlying distribution of documents over topics. This analysis ...

### 3 [QMRPACK: a package of QMR algorithms](#)


 March 1996 **ACM Transactions on Mathematical Software (TOMS)**, Volume 22 Issue 1

Publisher: ACM Press

 Full text available: [pdf\(2.07 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The quasi-minimal residual (QMR) algorithm is a Krylov-subspace method for the iterative

solution of large non-Hermitian linear systems. QMR is based on the look-ahead Lanczos algorithm that, by itself, can also be used to obtain approximate eigenvalues of large non-Hermitian matrices. QMRPACK is a software package with Fortran 77 implementations of the QMR algorithm and variants thereof, and of the three-term and coupled two-term look-ahead Lanczos algorithms. In this article, we discuss s ...

**Keywords:** Krylov subspace, Lanczos method, coupled two-term recurrences, eigenvalues, iterative method, linear systems, look-ahead, non-Hermitian matrices, quasi-minimal residual property, three-term recurrences, transfer functions

#### 4 Computing selected eigenvalues of sparse unsymmetric matrices using subspace iteration



I. S. Duff, J. A. Scott

June 1993 **ACM Transactions on Mathematical Software (TOMS)**, Volume 19 Issue 2

**Publisher:** ACM Press

Full text available: [pdf\(1.60 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

This paper discusses the design and development of a code to calculate the eigenvalues of a large sparse real unsymmetric matrix that are the rightmost, leftmost, or are of the largest modulus. A subspace iteration algorithm is used to compute a sequence of sets of vectors that converge to an orthonormal basis for the invariant subspace corresponding to the required eigenvalues. This algorithm is combined with Chebychev acceleration if the rightmost or leftmost eigenvalues are sought, or if ...

**Keywords:** Chebychev acceleration, eigenvalues, eigenvectors, large sparse matrices, real unsymmetric matrices, subspace iteration

#### 5 Compression of time-dependent geometry



Jerome Edward Lengyel

April 1999 **Proceedings of the 1999 symposium on Interactive 3D graphics**

**Publisher:** ACM Press

Full text available: [pdf\(1.32 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 6 GPGPU: general purpose computation on graphics hardware



David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff Woolley, Aaron Lefohn

August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**

**Publisher:** ACM Press

Full text available: [pdf\(63.03 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [citations](#)

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely powerful and flexible processor. The latest graphics architectures provide tremendous memory bandwidth and computational horsepower, with fully programmable vertex and pixel processing units that support vector operations up to full IEEE floating point precision. High level languages have emerged for graphics hardware, making this computational power accessible. Architecturally, GPUs are highly parallel s ...




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## » Key

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

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- ☐ 1. **Selection of best clustering features in a wavelet packet library**  
 Chinrungrueng, J.; Meyer, F.G.;  
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 Lee, H.; Lee, D.;  
[Acoustics, Speech, and Signal Processing, IEEE International Conference on](#)  
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... **basic vector** and document vector in calculating a residual matrix to enhance the retrieval for the outlier **cluster**. Using this **contribution vector**, ...

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Using this **contribution vector**, the selective scaling is performed to calculate the ... 13, a list of data is given as **basic vector** ID, labeling of **cluster**, ...

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This is utilized to compute a contribution of the eigenvector to the data, and for contracting or **enlarging** a **residual vector** to store. ...

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We can greatly improve these approximations to f by **enlarging** the collection {g ... The index of the plane in which a **residual vector** R ...

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[PDF] 1 Introduction

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by **enlarging** the collection ... corresponds to the orthogonal **basis vector** ... The initial **cluster** which contains the low-frequency  $w$  and the harmonics of ...

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[PS] Adaptive Nonlinear Approximations

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The initial **cluster** which contains the low-frequency  $w$  and the ... The inner product of each **basis vector** ... in which a **residual vector** ...

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One step of the Walker and Zhou algorithm (Algorithm 3.2.1) consists of **enlarging** the correction space C. m. by adding a new **basis vector** and then ...

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The set of estimated basic vectors enhances the sensibility for the outlier **cluster** by contracting or **enlarging** a **residual vector** according to a ...

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by **enlarging** the collection ... corresponds to the orthogonal **basis vector** ... The second **cluster** is the  $v$ . The nal portion of the signal is the  $s$ , ...

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canonical **basis vector**. Equation (2.5) can be rewritten in matrix form as ... algorithm where we denote by r the **residual vector** at the end of the first ...

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[PS] Comparison of algebraic solution methods on a set of benchmark ...

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The presence of many solution vectors, e.g. **enlarging** ... provides the minimization property on each **residual vector**, ... **"basic" vector** components ...

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transform coecient value corresponding to **basis vector** no. ... Instead of **enlarging** the training set, we dealt with the problem as follows: Af- ...

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Your Search was:

Last Name = KOBAYASHI

First Name = MEI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>08500793</u>	<u>5671330</u>	150	07/11/1995	SPEECH SYNTHESIS USING GLOTTAL CLOSURE INSTANTS DETERMINED FROM ADAPTIVELY-THRESHOLDED WAVELET TRANSFORMS	KOBAYASHI, MEI
<u>08867996</u>	<u>6055321</u>	150	06/03/1997	SYSTEM AND METHOD FOR HIDING AND EXTRACTING MESSAGE DATA IN MULTIMEDIA DATA	KOBAYASHI, MEI
<u>09480024</u>	<u>6512835</u>	150	01/10/2000	DATA HIDING AND EXTRACTION METHODS	KOBAYASHI, MEI
<u>09502159</u>	<u>6654742</u>	150	02/11/2000	METHOD AND SYSTEM FOR DOCUMENT COLLECTION FINAL SEARCH RESULT BY ARITHMETICAL OPERATIONS BETWEEN SEARCH RESULTS SORTED BY MULTIPLE RANKING METRICS	KOBAYASHI, MEI
<u>09791198</u>	<u>6922715</u>	150	02/23/2001	Computer implemented method and program for estimation of characteristic values of matrixes using statistical sampling	KOBAYASHI, MEI
<u>09844724</u>	<u>6804688</u>	150	04/27/2001	DETECTING AND TRACKING NEW EVENTS/CLASSES OF DOCUMENTS IN A DATA BASE	KOBAYASHI, MEI
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<u>10190990</u>	<u>6920450</u>	150	07/08/2002	RETRIEVING, DETECTING AND IDENTIFYING MAJOR AND OUTLIER CLUSTERS IN A VERY LARGE DATABASE	KOBAYASHI, MEI
<u>10278675</u>	<u>6965898</u>	150	10/23/2002	INFORMATION RETRIEVAL SYSTEM, AN INFORMATION RETRIEVAL METHOD, A PROGRAM FOR EXECUTING INFORMATION RETRIEVAL, AND A STORAGE MEDIUM WHEREIN A PROGRAM FOR EXECUTING INFORMATION RETRIEVAL IS STORED	KOBAYASHI, MEI
<u>10280893</u>	Not Issued	160	10/25/2002	Information visualization system, an information visualization method, a program for information visualization, a storage medium wherein a program is stored, and an information retrieval service system	KOBAYASHI, MEI
<u>10370224</u>	Not Issued	164	02/19/2003	INFORMATION PROCESSING USING A HIERARCHY STRUCTURE OF RANDOMIZED SAMPLES	KOBAYASHI, MEI
<u>10669799</u>	Not Issued	71	09/24/2003	Data retrieval method, system and program product	KOBAYASHI, MEI
<u>10896191</u>	Not Issued	30	07/21/2004	Computer executable dimension reduction and retrieval engine	KOBAYASHI, MEI
<u>11113631</u>	Not Issued	30	04/24/2005	Stabilizing solutions to output feedback pole placement problem with parameter drift and automated alerting of system parameter changes	KOBAYASHI, MEI
<u>07254153</u>	<u>4989182</u>	150	10/06/1988	DYNAMIC RANDOM ACCESS MEMORY HAVING DUMMY WORD LINE FOR FACILITATING RESET OF ROW ADDRESS LATCH	KOBAYASHI, MEIKO

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Your Search was:

Last Name = AONO

First Name = MASAKI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>07427680</u>	<u>5049986</u>	150	10/26/1989	METHOD AND APPARATUS FOR COLOR IMAGE QUANTIZATION	AONO, MASAKI
<u>08898750</u>	<u>5936633</u>	150	07/23/1997	RENDERING METHOD AND APPARATUS, AND METHOD AND APPARATUS FOR SMOOTHING INTENSITY-VALUE	AONO, MASAKI
<u>08902270</u>	<u>6034691</u>	150	07/29/1997	RENDERING METHOD AND APPARATUS	AONO, MASAKI
<u>09084480</u>	<u>6201881</u>	150	05/22/1998	EMBEDDING INFORMATION IN THREE-DIMENSIONAL GEOMETRIC MODEL	AONO, MASAKI
<u>09119691</u>	<u>6314205</u>	150	07/21/1998	METHOD AND APPARATUS FOR COMPRESSING AND TRANSMITTING A THREE-DIMENSIONAL GEOMETRIC MODEL	AONO, MASAKI
<u>09734137</u>	<u>6573899</u>	150	12/11/2000	MORPHING PROCESSING APPARATUS, METHOD, STORAGE MEDIUM, PROGRAM TRANSMISSION APPARATUS, AND ANIMATION CREATION APPARATUS	AONO, MASAKI
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				INFORMATION RETRIEVAL, AND A STORAGE MEDIUM WHEREIN A PROGRAM FOR EXECUTING INFORMATION RETRIEVAL IS STORED	
<u>10280893</u>	Not Issued	160	10/25/2002	Information visualization system, an information visualization method, a program for information visualization, a storage medium wherein a program is stored, and an information retrieval service system	AONO, MASAKI
<u>10370224</u>	Not Issued	164	02/19/2003	INFORMATION PROCESSING USING A HIERARCHY STRUCTURE OF RANDOMIZED SAMPLES	AONO, MASAKI
<u>10669799</u>	Not Issued	71	09/24/2003	Data retrieval method, system and program product	AONO, MASAKI
<u>10896191</u>	Not Issued	30	07/21/2004	Computer executable dimension reduction and retrieval engine	AONO, MASAKI

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